Abstract of the Disclosure:

A method for producing a memory cell includes masking a desired polysilicon structure with an oxidation-inhibiting layer, preferably a nitride layer. The polysilicon above source/drain regions and field regions is then converted into silicon dioxide. At the same time, filling with silicon dioxide is effected between adjacent polysilicon paths. The field oxide thickness is increased by the conversion of polysilicon in the field regions as well. A second polysilicon layer is applied over a field region, with inclusion of the oxidation-inhibiting layer present there. One electrode of a capacitor is produced therefrom through the use of marking and etching, with the first polysilicon situated under the oxidation-inhibiting layer forming another electrode and the oxidation-inhibiting layer forming a dielectric. The structure provides a less complex masking and etching technique as well as improved reliability of the components.

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(71) Anmelder *(für alle Bestimmungsstaaten ausser US)*: SIEMENS AKTIENGESELLSCHAFT [DE/DE]; Wittelsbacherplatz 2, D-80333 München (DE).

(72) Erfinder; und
(75) Erfinder/Anmelder *(nur für US)*: PLASA, Gunther [DE/DE]; Felden 1 A, D-83233 Bernau (DE).

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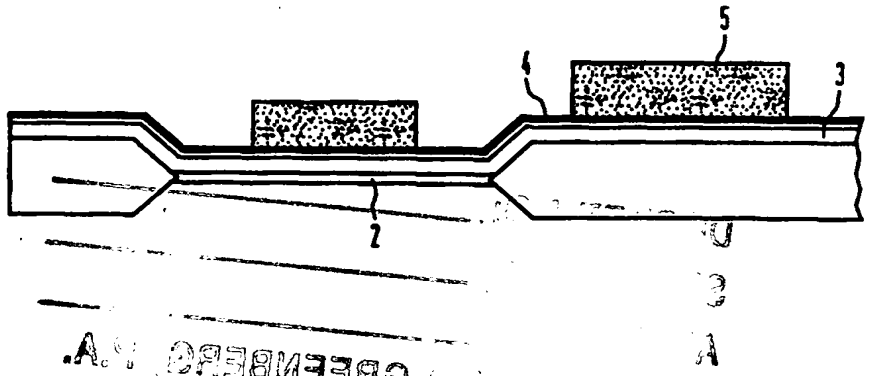
(54) Title: PROCESS FOR PRODUCING A NON-VOLATILE MEMORY CELL

(54) Bezeichnung: HERSTELLUNGSVERFAHREN FÜR EINE NICHTFLÜCHTIGE SPEICHERZELLE



(57) Abstract

A process for producing a non-volatile memory cell is disclosed. The desired polysilicon structure is masked by an oxidation-inhibiting layer, preferably a nitride layer. The polysilicon above the source/drain regions and field effect regions is then converted into silicon dioxide. The interval between adjacent polysilicon paths is thus filled with silicon dioxide. The conversion of polysilicon also increases the field oxide thickness in the field effect regions. A second polysilicon layer is applied on a field effect region so as to include the oxidation-inhibiting layer located therein, and one capacitor electrode is formed therefrom by masking and etching. The first polysilicon layer below the oxidation-inhibiting layer forms the other capacitor electrode and the oxidation-inhibiting layer forms the dielectric. The advantages of the invention consist in a less complex masking and etching technique and in an improved reliability of the components.